

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1. (Currently Amended) An ~~active spacecraft~~ antenna comprising: an active face, at least one radiating element for transmitting radio frequency (RF) signals via the active face, and a metal-free thermal control film covering the active face, the metal free thermal control film comprising:

a multi-layer interference filter having alternating ~~[[high]]~~ higher and ~~[[low]]~~ lower refractive index ~~non-metallic~~ layers arranged to filter the radiation based on interference effects between different components of the radiation produced by reflection at the boundaries between the layers, said control film exhibiting preselected high absorbency and emissive characteristics in the ~~[[far]]~~ infrared wavelength range 2.5 $\mu$ m to 50 $\mu$ m, low absorbency characteristics in the solar spectrum range 200-2500nm and high transmissive characteristics in the microwave frequency spectrum 1 to 30GHz, wherein the thermal control film allows heat dissipated in the antenna to be radiated into space via the active face.

2. - 3. (Cancelled)

4. (Currently Amended) A thermal control film The antenna according to claim 1, wherein the film is in the form of a flexible sheet.

5. (Canceled)
6. (Currently Amended) ~~A thermal control film~~ The antenna according to claim 1 wherein the multi-layer interference filter is a polymeric structure.
7. (Currently Amended) ~~A thermal control film~~ The antenna according to claim 1, wherein the multi-layer interference filter comprises one or more layers of any of combination of  $\text{SiO}_2$ ,  $\text{SiO}_x\text{N}_y$ , and  $\text{Si}_3\text{N}_4$ .
8. (Currently Amended) ~~A thermal control film~~ The antenna according to claim 7, wherein the film is in the form of a plurality of tiles.
9. (Currently Amended) ~~A thermal control film~~ The antenna according to claim 1, wherein the thickness of the film is less than 200 microns.
10. (Currently Amended) ~~A thermal control film~~ The antenna according to claim 1, wherein the thickness of the film is in the range of 50 to 150 microns.
- 11.-13. (Cancelled)
14. (Currently Amended) ~~A thermal control film~~ The antenna according to claim ~~[[13]]~~ 4 wherein the multi-layer interference filter is a polymeric structure.

15. (Currently Amended) ~~A thermal control film~~ The antenna according to claim 14, wherein the multi-layer interference filter comprises one or more layers of any of combination of  $\text{SiO}_2$ ,  $\text{SiO}_x\text{N}_y$ , and  $\text{Si}_3\text{N}_4$ .

16. (Currently Amended) ~~A thermal control film~~ The antenna according to claim 15, wherein the film is in the form of a plurality of tiles.

17. (Currently Amended) ~~A thermal control film~~ The antenna according to claim 16, wherein the thickness of the film is less than 200microns.

18. (Currently Amended) ~~A thermal control film~~ The antenna according to claim 17, wherein the thickness of the film is in the range of 50 to 150microns.

19.-20. (Cancelled)

21. (New) The antenna according to claim 1 wherein the film is formed by applying a liquid coating to a surface of the spacecraft.

22. (New) The antenna according to claim 1, wherein the thermal control film is a metal-free film.